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ABSTRACT

The conference brought together on a national scale equal numbers of leaders (120 in all) from the major health professions to define the issues in the increasingly important matter of interdisciplinary education, in order to give impetus to more detailed considerations of institutional, regional, and ultimately national levels of health education. The report comprises a description of the organization of the conference and the development of the report, the chairperson's introduction; and the recommendations and conclusions of the steering committee. Discussion groups considered six questions: (1) Why educate teams? (2) Who should be so educated? (3) How should students be educated (classroom emphasis)? (4) How should students and professionals be educated (clinical emphasis)? (5) What are the requirements for educating health care delivery teams? (6) What are the obstacles? Two papers presented at the conference on these themes are among the appendixes, as is a report of the proceedings. The steering committee's recommendations are aimed at three levels: administrative, teaching, and national, stressing the importance of recognition of an obligation to engage in interdisciplinary education, the value of clinical settings for developing interdisciplinary education, and the need for governmental and professional support of interdisciplinary education for health care delivery teams. (AJ)

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REPORT OF A CONFERENCE

JUL 25 1975

Educating for The Health Team

October 1972

NATIONAL ACADEMY of SCIENCES
Washington, D.C.

CE004639

INSTITUTE OF MEDICINE

EDUCATING FOR THE HEALTH TEAM

Report of the Conference on the Interrelationships of Educational Programs for Health Professionals

October 2-3, 1972

National Academy of Sciences
Washington, D.C.

NOTICE

This is the report of a project undertaken with the approval of the Councils of the Institute of Medicine and of the National Academy of Sciences. Such approval manifests the judgment that the project is of national importance and appropriate both to the purposes and professional resources of the Institute of Medicine.

The members of the committee appointed to conduct the project and prepare the report were selected for recognized competence and with due consideration for the balance of disciplines appropriate to the project. Responsibility for the substantive aspects of the report rests with that committee.

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Conference on the Interrelationships

of Educational Programs for Health Professionals

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PREFACE

The Institute of Medicine is pleased to issue this report of a meeting that proved to be a signal effort in opening discussions at a national level among the major health professions on the subject of interdisciplinary education. The Conference on the Interrelationships of Educational Programs for Health Professionals was designed primarily to furnish a relatively uncluttered meeting-ground where conferees from diverse health fields could begin to explore together the ways in which health care teamwork might be taught. The conference planners, a steering committee headed by Dr. Edmund Pellegrino, envisioned the discussions as an initial movement that was hoped to give impetus to more detailed considerations of institutional, regional, and ultimately national levels of health education. The steering committee and I feel that the conference was a particularly successful beginning.

The conference discussions, conducted largely as small-group colloquies, were not intended to produce guidelines for the ready establishment of successful interprofessional education programs. The portion of this report that is called "conclusions and recommendations" therefore is not a consensus of the conferees but is a distillation of the steering committee's reflections after review and discussion of transcripts of the small-group meetings.

I am grateful to the steering committee for its time and effort spent in organizing the conference and studying its proceedings. A special expression of thanks is due Dr. Pellegrino for his work in assembling the health professionals for the meeting and contributing the framework for their considerations. The Institute and I also want to thank the former Bureau of Health Manpower Education and Health Services and Mental Health Administration for financial support of the conference.

John R. Hogness, M.D.
President
Institute of Medicine

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HIGHLIGHTS OF RECOMMENDATIONS

At the administrative level...

...academic health centers must recognize an obligation to engage in interdisciplinary education and patient care, and regional consortia of health professional schools not otherwise associated with academic health centers should be formed to foster educational teamwork;

...methods must be developed within institutions to relate interdisciplinary education to the practical requirements of health care.

At the teaching level...

...clinical care, and particularly ambulatory care, offers a setting with the most immediate promise for successful interdisciplinary education, while classroom instruction appears initially more feasible in the humanities and the social and behavioral sciences associated with health care;

...interdisciplinary instruction will require that faculties develop new skills, present new role models, and work to understand the impediments that have accumulated to hamper cooperation among health professions.

At the national level...

...a clearinghouse should be established to collect and distribute information on programs of interdisciplinary education and models of health care teams;

...government agencies should support innovative interdisciplinary health education, new health care models associated with educational programs, and research on the obstacles to interprofessional cooperation;

...the Institute of Medicine should further the lines of investigation opened by this conference and advance the concepts of interdisciplinary education in the health professions.

REPORT OF THE CONFERENCE ON THE INTERRELATIONSHIPS OF EDUCATIONAL PROGRAMS FOR HEALTH PROFESSIONALS

CHAPTER I

Organization of the Conference and Development of the Report

On October 2 and 3, 1972, the Institute of Medicine sponsored a Conference on the Interrelationships of Educational Programs for Health Professionals. One hundred twenty leaders were invited from five health professional fields--medicine, dentistry, nursing, pharmacy, allied health. The conference was organized by an eleven-member interdisciplinary Steering Committee, composed of three people from nursing, four from medicine, two from pharmacy, one from dentistry, and one from allied health.

The Plan for the conference was largely based on assignment of the participants to 12 small discussion groups. Each group was asked to discuss one of the following six specific questions relating to interdisciplinary education:

(1) Why do we need to educate teams for the delivery of health care?

(2) Who should be educated to serve on health delivery teams?

(3) How should we educate students of health professions in order that they might work in teams? (emphasis on classroom and basic behavioral and biological sciences curriculum)

(4) How should we educate students and health professionals in order that they might work in teams? (emphasis on clinical training)

(5) What are the requirements for educating health professionals to practice in health care delivery teams?

(6) What are the obstacles to educating health professionals to practice in health care delivery teams?

Two plenary sessions also were scheduled: At the opening session, the conference chairman, Edmund D. Pellegrino, reviewed the concept and history of interdisciplinary health education. Two speakers, Eleanor Lambertsen and William Stewart, presented short papers further defining the context of the discussions to follow. In the closing session, the considerations of the discussion groups were briefly reviewed by William Brown, and John Millis presented summary remarks.

The remarks of Drs. Lambertsen, Stewart, and Millis are appendices to this report. Dr. Millis' comments are in the "Summary of the Conference" section, prepared by Paul Danaceau, staff officer for the conference. Mr. Danaceau reviewed the tape recorded proceedings of all the discussion groups and synthesized their concerns in his summary.

The essence of this report is in the conclusions and recommendations of the steering committee. The steering committee met several times during the year preceding the conference, during and immediately after the conference, and again in the months following. Discussion group leaders were all members

of the steering committee.

Mr. Danaceau's digest of the 2,400 pages of tape recording transcripts served as the record from which the steering committee developed its conclusions and recommendations.

The conference was a pioneering event, bringing together on a national scale equal numbers of leaders from the major health professions to define the issues in the increasingly important matter of interdisciplinary education. The discussions have facilitated an outline of the promises and challenges of educating for teamwork in health care. The series of recommendations suggest subsequent steps in the development of such education.

In its recommendations, the steering committee has tried to capture points of consensus but has not circulated the recommendations for approval by all the conferees. The responsibility for the recommendations rests with the committee. The text of the tapes will be stored by the Institute of Medicine and made available to conferees who may wish to inquire into the discussions in greater depth.

CHAPTER II

INTERDISCIPLINARY EDUCATION IN THE HEALTH PROFESSIONS: ASSUMPTIONS, DEFINITIONS, AND SOME NOTES ON TEAMS

Edmund D. Pellegrino, M.D., Chairman

I. Introduction

Few subjects are more appropriate for consideration by the Institute of Medicine than the one of interprofessional education. It reflects the breadth of membership of the Institute and its concern for issues that transcend particular professions. More important, however, it bespeaks the dedication of the Institute to emergent issues of national importance in health.

A major deterrent to our efforts to fashion health care that is efficient, effective, comprehensive, and personalized is our lack of a design for the synergistic interrelationship of all who can contribute to the patient's well-being. We face, in the next decade, a national challenge to redeploy the functions of health professions in new ways, extending the roles of some, perhaps eliminating others, but more closely meshing the functions of each than ever before.

There are organizational, political, ethical, and legal problems to be faced. But, it is certain that in the coming process of reexamination the responsibility of the academic health centers and other educational institutions will be central. Can the provision of health care be improved by the closer interaction of health professionals in new ways, and can the educational

health professionals together facilitate the cooperative endeavors so urgently needed in practice?

This is the focal question to which we shall address ourselves in this conference, the first in which representatives of five major health professions have come together to define the issues, to seek better understanding of one another's aspirations for optimal roles in health care, and to recommend steps for a more precise answer than we now possess. In what ways do our programs reinforce or impede one another? In what ways can future health professionals be better prepared to work cooperatively for the benefit of patients, families, and communities?

There have been some notable beginnings, but all on a limited scale. In 1967, the College of Pharmacy of the University of Michigan sponsored a conference to inquire into some of these questions involving pharmacy, nursing, and medicine.[1] Then, in 1970, a similar conference involving predominantly medicine and pharmacy, with some participation by other professions, was held at the University of California in San Francisco.[2] Most recently, the committee which met under the sponsorship of the Secretary of Health, Education, and Welfare to prepare a white paper on the extended role of the nurse included representatives of medicine, allied health, and administration.[3] In such places as the Advisory Committee on Education for the Allied Health Professions and Services of the Council on Medical Education of the AMA and the Special Study Committee for the Evaluation of the Physician's Assistant of the National Board of Medical

Examiners, we can observe evidences of the growing realization of the necessity for a cooperative definition of roles and functions of the major health professions.

We are still far from the large-scale national effort that brings together the truly effective exchange among educators and practitioners needed to provide the answers society will seek from us. This conference, then, is a signal occasion -- and the Steering Committee hopes it will be the first in a series of interprofessional dialogues from which some design can emerge for the optimal utilization and deployment of health manpower.

II. A Definition and Some Assumptions

a) "Interdisciplinary" teaching and learning

In planning for the conference, the Steering Committee has accepted an operational definition of the term interdisciplinary, since it is subject to so many various interpretations. An educational experience can be interdisciplinary at the level of students, at the level of faculty, or at both levels. Thus, each of the following combinations is properly interdisciplinary:

i) Students from more than one health profession taught by faculty from one health profession;

ii) Students in one health profession taught by faculty from more than one profession;

iii) Students from more than one health profession taught by faculty from more than one profession.

Varying kinds and numbers of students and faculty will be found in particular instances of each of the major categories, but all

should be regarded as bona fide interdisciplinary efforts.

It must be noted that interdisciplinary teaching does not require that teaching be carried out by faculty from several health professions teaching together in every session. Moreover, the three forms of bona fide interdisciplinary educational experiences may take place in formal classroom or in clinical settings.

These distinctions hopefully will prevent long discussions on the exclusiveness or superiority of any one of the three forms of interdisciplinary teaching or learning. Presumably, each will be suitable to one or another teaching or learning objective, and the appropriate mode will be adapted to the goals selected.

b) Some assumptions underlying the conference

The Steering Committee made certain assumptions in developing the structure of this conference. They require identification before the reader who did not attend can understand its content and the Steering Committee recommendations, which were drawn from that content.

The primary assumption, upon which the others are based and from which they are deduced, is this: There is today -- and there will be increasingly in the foreseeable future -- a serious problem in how to use existing health manpower optimally to meet the health needs of individuals and of communities. There are now some four million health workers in this nation; their number and kind are proliferating in random fashion; each defines

certain functions for itself either by self-arrogation or by delegation but almost never in collaboration with other health professionals; new professions appear to fill in the gaps left between the perimeters of existing professions; educational programs duplicate each other, as do facilities; many, many small programs appear in response to local needs.

Costs mount; the actual personal services rendered to patients seemingly decrease as the numbers of professionals increase. Nowhere have we solved the human engineering problem of how to deploy functions optimally, how to make the efforts of all health professionals synergistic instead of competitive, and how to enable each health professional to make its special contribution and extend the full potentiality of its capabilities and education in the health care system.

The second assumption is that the educational institutions in this country, which have a major social responsibility for producing health manpower to meet the needs of our society, have an equal responsibility to deal with the problem of their optimal utilization. Education can influence the roles professionals play either positively or negatively. But presently, little attention is being devoted to this influence by our academic health centers and our professional schools. The committee believes that the attention of the educational institutions must be directed more energetically to the underlying problem, or no lasting solution will be forthcoming.

The third assumption is that the optimal use of health manpower requires a cooperative effort in health care delivery and

that this cooperative effort, involving one or more health professionals acting in concert for a stated purpose, can be conveniently referred to as a team. There are many such teams, each varying in composition and purpose, depending upon the needs they are designed to meet. But the difficulties in definition notwithstanding, the optimal deployment of health manpower is contingent upon a deeper exploration of the design and operation of groups of health care professionals acting in concert toward a stated goal.

The fourth assumption -- or set of assumptions which are really corollaries of the third -- is that the needs of patients and communities can, in fact, be better met by the use of teams. This is for many still an open question. Teams have no real social utility unless they meet the needs of individuals or communities more efficiently, more effectively, more economically, more humanely, and in a more personalized way. Some health care needs are admittedly better served by individual practitioners than by several acting in concert. But, the assumption of the Steering Committee is that a large number of other needs is better served by a team effort.

The fifth assumption is that professionals are not prepared today to function in health care teams, that their traditional perceptions of role interfere with productive team dynamics, that misinformation about colleagues in other health professions and lack of a common language among health professionals will continue to impede cooperative efforts in the future. These attitudes can be ameliorated if there is a concerted effort to

provide opportunities for students in all the health professions to share certain formal course work and seminars, to work together in practical models that exemplify cooperative effort and share certain basic knowledge and skills that enable them to communicate equally as members of a team.

The thesis, as yet not widely accepted, is that students will be better disposed to cooperative efforts as practitioners if they have opportunities to experience working together as students in valid models of cooperative health care delivery. This requires reinforcement by the opportunity to see behavioral models among faculty members, especially if such models are used in the actual delivery of care in the teaching institutions.

The sixth and final assumption is that directing the attention of educational institutions, students, and faculty to the problem of optimal manpower utilization and recognizing that such an effort is based in some as yet unproved assumptions will stimulate the research and evaluation required to test these assumptions. The problem is too urgent to be left to chance or destructive competition. The unedifying territorial disputes in some instances are already disconcerting the public. We owe those we serve some answers on the probity or non-probity of our assumptions. This is, after all, a fundamental duty of educational institutions, readily accepted in biomedical research but just as pertinent in research into health care delivery.

By an inquiry into some of these issues and these assumptions, the Steering Committee believes that the fundamental purposes of academic health centers will be better delineated and steps can

be taken toward a closer congruence between the needs of society and the numbers and kinds of health personnel we produce. The present conference, therefore, aims to initiate discussion of these issues among some of the major health professions, to open up a dialogue which has, as yet, not involved so many professions at one time, to draw from these discussions a set of recommendations for short-term and long-term actions, and to delineate issues worthy of further research.

III. Some Notes on Teams

Few conceptions are more vexatious or more emotionally laden than the conception of the team. The word regularly induces responses that range from the romantic to the cynical. With two other well worn shibboleths -- the student and the patient -- the mention of the team can bring any discussion about education or practice in the health field literally to a screeching halt or can precipitate ecstatic illusions. Neither extreme is very helpful to our purpose, and both grow from a failure to accept some reasonable working or operational definition of the term.

Since we hope in this conference for a productive exchange of ideas and the evolution of a basis for continued and deeper discussions, we must risk some working statement of our own meaning of the term. There is no expectation that the definitions will be acceptable to any significant number of the participants, but perhaps they will provide stimuli for some and targets for others and thus advance our progress to more acceptable definitions.

There is no such thing as "the team" in health care, painful

as this may be for our favorite combination of health professionals. This must be axiomatic, despite the connotations of specificity each of us may entertain, as we use the word. Instead, there are a large number of health teams, dedicated to varying purposes. The team, therefore, is a transitory social system, consisting of a number of persons working together for a defined and mutually accepted goal and according to a mutually accepted program in which each member understands and accepts his functional contribution to the goal. When used in the health care system, the team has as its goal the satisfaction of specific needs of an individual patient, a family, or a whole community.

The purpose of a group or team approach is to optimize the special contribution in skills and knowledge of the team members so that the needs of the persons served can be met more efficiently, effectively, competently, and more considerately than would be possible by independent and individual action. Without question, the patient himself is a member of the team and, in a democratic society, can be expected increasingly to exert his prerogatives to participate in decisions that affect his well-being.

As a transitory system, each team has an existence only so long as the needs it is designed to meet are extant. Its composition is determined by those needs, and its captaincy may be expected to vary with the nature of the needs and which of them is preponderant at any particular time. The stability of some teams -- coronary care or surgical teams, for instance -- may be greater than that of others -- teams fashioned to meet the specific needs of individual patients.

Teams may be classified accordirg to a variety of organizing principles. I personally prefer two of these, one dependent upon the immediacy of contact with the persons to be served and the other dependent upon the nature of the task to be performed. If these two organizing principles are considered orthogonally, they can yield a matrix within which most teams can be located for purposes of discussion.

Let us look first at the first principle -- closeness of contact with the person to be served. Individual transactions with the patient still constitute the heart of health care.

a) I would like to name the first category, then, the patient care team. This comprises any group of professionals, semi-, and nonprofessionals who jointly provide needed services that bring them into direct personal and physical contact with the patient and which are part of his personal and individualized program of management. The smallest team of this type consists of the doctor and the nurse. Others enter it in different settings: social workers, dieticians, physical therapists, and so on. These are the people who lay hands directly on the patient, have the most sustained contact with him as a person, rather than with a part of him, and must experience with him the joy of cure and the burden of failure and death. Some patient care teams are of well-established composition -- the operating team, the coronary care team, the mental health team. All introduce others transiently for the benefit of the patient, and all patient care teams need the support of the next level of team organization.

b) The second category is the medical care team or teams. This grouping provides essential back-up services for the patient care teams. It is not in close continual contact with the patient. Some of its members deal transiently on a personal basis with the patient and, even then, for a short interval. Others do not work with the patient personally. They deal with a part of the patient -- his sputum, urine, X-rays, medications, and so forth. Members of these teams are, for example, laboratory technicians, pathologists, radiologists, X-ray technicians, pharmacists.

The members of the medical care teams may, in turn, be members of more permanent teams organized along functional lines -- the pharmacy team, the laboratory team, and others. They move into and out of the sphere of influence of the patient care teams as the needs of the patient require, but they do not participate in the day-by-day management of the personal and psychosocial requirements of the patient's illness.

c) The third category, in this method of classification, is the health care team. Its members are the most distantly related to the individual patients and usually have as their concern the entire community. Such teams concentrate on the health of the aggregate, the delivery of all services, their availability and accessability, the costs of care, the distribution of resources in facilities and personnel, the regulation of quality, and the production of manpower adequate in number and kind to meet society's needs. The members of the health care team are very varied and may include a broad spectrum of

disciplines and professions -- public health officers, hospital administrators, epidemiologists, medical economists and sociologists, community medicine specialists, engineers, insurance carriers, and others. In this broad category, almost every profession may play a role, depending upon the problems the community faces in planning for and implementing a regional or national health policy.

Clearly, these three types of teams must interact with each other, and members of each category will from time to time serve on each of the other categories. Any attempt to establish some rigid formula for the composition of the three levels of teams described here would be self-defeating.

A second organizing principle which can be used to define teams for the delivery of health care is the functional one. This principle operates simultaneously with the principle of organization around the individual patient or community mentioned above. These teams are more stable than the others, and, on the whole, their composition may more easily be defined because the task is the focus of the organization, rather than the patient or the community.

Examples of functionally determined teams are these: the primary care team, the coronary care team, the open heart team, the psychiatric team, the nursing team, the pharmacy team, the dental team. Here, a group of health professionals enjoys a more or less stable relationship built on the contribution each can make to meeting the specific needs of a patient. They constitute a reasonably well functioning group whose captaincy will

vary with the nature of the task to be done. These task- or function-oriented teams are constantly interacting with the teams built around the more general personal needs of patients. Their members are often functioning on more than one team at a time.

I have chosen two organizing principles -- closeness to the patient and functional intent -- to illustrate the complexities of team interaction and the impossibility of thinking of "the team." What is common to all these examples, however, is the concept of the team as a transitory grouping of health professionals of varying degrees of permanence, dedicated to the satisfaction of specifically defined needs of patients or communities, with its composition and captaincy deriving from the nature of those needs. This is the conception we must communicate to every student in the health professions. This is the concept our students should see illustrated in their educational institutions, particularly in the patient care services those teaching institutions provide.

This fundamental idea of the team, illustrated by experience under supervision in the clinical setting, should be a common experience for all students in the health professions. It is the major thesis of the Steering Committee, upon which it has built this conference, that this concept can be communicated to students by certain shared educational experiences. If we accept this idea -- or at least explore it further in this conference -- we can then proceed to determine what is needed in the way of a common language and common skills among health

professionals. Out of this definition will emerge the outline of the formal and clinical learning experiences required for interdisciplinary education that has social utility.

The Steering Committee is hopeful that the unusual opportunity provided in the next two days by the Institute of Medicine will open up the interprofessional conversation so urgently needed now for a clearer delineation of the issues in interdisciplinary education. Each of you is mindful of the uniqueness of a meeting in which so many of your colleagues from other professions are represented.

We are confident you will use this opportunity to construct the first steps in our progress toward optimal utilization of the efforts of each of our professions to serve society in the most responsible and efficient manner.

References

[1]Pharmacy/Medicine/Nursing, Conference on Health Education, University of Michigan, February 16-18, 1967.

[2]"Challenge to Pharmacy in the 70's," Proceedings of an Invitational Conference on Pharmacy Manpower, sponsored by School of Pharmacy, University of California and National Center for Health Services Research and Development, DHEW, San Francisco, California, September 10-12, 1970.

[3]Conference on Extended Role of the Nurse, sponsored by Department of Health, Education, and Welfare, Roger Egeberg, Secretary, 1972.

CHAPTER III

RECOMMENDATIONS AND CONCLUSIONS OF THE STEERING COMMITTEE

RECOMMENDATIONS

I. Every academic health center (i.e., two or more health professional schools, usually in association with multiple care settings) has an obligation to engage in interdisciplinary education and to foster cooperation among health professions in the delivery of care.

II. Educational institutions that prepare health professionals but are geographically or administratively outside of academic health centers should, wherever possible, become more closely related to academic health centers and integrated into interdisciplinary educational programs. Interinstitutional cooperative arrangements and consortia should be developed on a regional basis.

III. Effective intrainstitutional arrangements should be developed to better relate the functions of interdisciplinary education to the practical requirements of health care delivery.

IV. Interdisciplinary educational and practical experiences are most easily developed in clinical health care settings. Ambulatory care, either for individuals or specific population groups, is the most appropriate area in which to begin to develop health care team models.

V. Classroom and seminar experiences in interdisciplinary education are most feasible in the social, behavioral, and humanistic issues that are basic to the functions of all the health professions and to understanding the health care needs of society.

VI. Efforts to explore shared educational experiences in the basic sciences should be encouraged and supported on a selective basis, recognizing that the opportunities will be less frequent than in ambulatory care or social science settings.

VII. Faculty members have a responsibility to develop new skills in interdisciplinary teaching, and to demonstrate in their practice new role models for a variety of health care delivery settings. Students will not appreciate the possibilities of interdisciplinary action unless they can observe these models in their own and other health professions.

VIII. Major social and behavioral research is needed into the origins, causes, and alleviation of the tensions within and among the health professions.

XI. A national clearinghouse should be established to gather, catalogue, and distribute information on programs of interdisciplinary education and health care teams in both practice and educational settings.

X. Discussions should continue among the major professions at the national, regional, and local institutional levels on interdisciplinary education and health care teams.

XI. Public and private funding agencies should be encouraged to support:

(a) the development of innovative interdisciplinary educational programs;

(b) research into areas of interdisciplinary education and health care teams;

(c) the establishment and evaluation of new models of health care delivery that are closely linked to interprofessional educational efforts;

(d) the diffusion of knowledge gained through these efforts by publications, seminars, conferences, and other appropriate means;

(e) research to identify attitudinal obstacles to interprofessional efforts in education and practice, and to find ways to reduce their effects.

XII. The Institute of Medicine should pursue the issues and ideas raised by this conference, and advance the concepts of interdisciplinary education and health care teams. Appropriate activities could include:

(a) the development of guidelines for more effective institutional arrangements for relating the functions of teams in health care delivery settings to interdisciplinary educational programs;

(b) an interpretive effort at cataloguing existing inter-

disciplinary educational activities, highlighting pedagogical problems and identifying successful models and courses for others to consider;

(c) appointment of a committee or subcommittee of the Institute's Committee on the Education of Health Professions to continue an exploration of interrelationships in educational programs for the health professions.

CONCLUSIONS

This section is an interpretation by the steering committee of the major themes derived from a review of the conference papers and discussions. The principal considerations advanced by the conferees and the committee were these:

(1) The ultimate goal of interdisciplinary education and health care teams must be to better utilize health manpower in order to make available health care that is more comprehensive, effective, and compassionate.

(2) All health professionals need a better comprehension of how their respective functions interrelate with one another. While each must understand his own unique role, he must also know the specific contributions others can make to the resolution of the clinical problem at hand. Only then can the total effort of all health professions be coordinated to meet the concerns and interests of the consumers.

(3) Many health professional schools have recently undergone periods of intensive curricular change and innovation. Further major changes may be difficult to realize at the present time, but much can be accomplished in interdisciplinary education by working within the present educational context and without major curricular upheaval.

(4) Efforts in behalf of interdisciplinary and interprofessional education are not designed primarily to facilitate educational "ladders" or career "mobility," but to improve the effectiveness of health manpower toward the ends of better health care.

There was a consensus among the conferees that a perceptible trend toward interdependence among the health professions would increase regardless of the form of the health delivery system or its financing mechanisms. There was no unanimity of opinion about the desirable nature and content of interdisciplinary education, but there was agreement that the professional educational process should not isolate the student from his colleagues in the other health professions.

Efforts should be made now in educational institutions to bring students from various health care disciplines into contact with one another during their training years to:

(1) encourage them to learn about the essential contributions of all other professional groups with whom they share a common objective;

(2) learn to integrate the roles of different professions into a functional system of patient care in a variety of settings;

(3) exploit the learning opportunities in existing settings where principles of the interdisciplinary team approach are already practiced, such as certain types of acute care;

(4) enable students to recognize consciously that, while their roles are different, they can and must be complementary.

The organizational and administrative obstacles to achieving these objectives are many. It is clear that single, free-standing professional schools with no collaborative ties to other health schools or to a health sciences center have great difficulty offering their students any significant exposure to interdisciplinary education. It is equally clear that many schools which now coexist in academic health centers do not make maximal use of their opportunities because of attitudinal and administrative encumbrances. A few examples do exist in which creative consortia of educational institutions have encouraged the development of effective interdisciplinary efforts, but they are the exception. Generally speaking, linkages are inadequate between existing models of health delivery and the educational institutions charged with developing the manpower for these systems.

While each institution has different strengths and resources for the purpose of developing interdisciplinary education, examples of professional interdependence and of various kinds of health care teams are most readily demonstrated in the clinical setting. The clinical setting also has the additional advantage of emphasizing the patient and the outcome of care, rather than on professions, their techniques, or the process of care.

In this respect, the ambulatory care environment is a particularly apt situation in which to establish a fledgling interdisciplinary teaching and patient care effort; there are fewer binding traditions, a greater willingness to experiment with and evaluate new approaches to care, and a more urgent need for the development of effective health care teams.

Common classroom and laboratory experiences in the preclinical and basic science disciplines are also useful. A number of interesting efforts are taking place in the United States and Canada. But in all likelihood extensive interdisciplinary education in the basic biomedical sciences--such as anatomy, biochemistry, physiology, pharmacology, microbiology--will be difficult to achieve because of variations in the scientific preparation of students in different health professional schools. A more feasible academic pattern might include a common pre-health-professional science program comprising such courses as mathematics, biology, physics, and chemistry. Nonetheless, creative efforts to explore educational experiments in these areas should be encouraged and supported as well as evaluated. More possibilities exist than would appear at first glance, and these should be vigorously explored.

An educational area that does lend itself well to an interdisciplinary approach is that of social, behavioral, and humanistic studies. These are becoming basic to all the health professions. Students from the various professions can, at an early point in their training, undertake joint studies in the following areas:

the social, economic, and political contexts in which the health professions exist; the ethics and human value issues in health care; health and public policy; the history of the professions and the common heritage the health professions share. Additional topics would include the changing nature of health care practice, trends in its organization and delivery, and the essential interdependence of the professions. Students could readily explore together the issues regarding health teams or cooperative working arrangements as well as the concepts of group dynamics and organizational behavior. These are all matters of common concern to the health professions. By studying these subjects together, students in the health professions could build up a common intellectual and substantive base for a patient-oriented team approach to health care.

Perhaps the most fundamental obstacles to the development of interdisciplinary education and the team approach to health care are the long-standing attitudes that exist in educational institutions and within the various professions. Excessive professionalism, inappropriate defense of prerogatives, and status-striving create major impediments to any future efforts?

Inter- and intraprofessional tensions need to be better understood if they are to be surmounted as major deterrents to developing a consumer- and outcome-oriented teaching approach to health care. Though the aloofness and separateness of the medical profession received particular attention from the conferees, other professions exhibit some of the same attitudes. Too much emphasis is given to the issues of the captaincy of the

team and the mechanism of delegation of tasks and not enough to optimizing the contribution of each profession to the total effort.

The educational system must itself become more sensitive to changes in the perceived and actual health care needs of society. Faculty members must be persuaded of the value of interdisciplinary education, but they must also gain personal experience in this educational and practice mode if they are to illustrate professional interdependence and act as role models for their own students. Without some visible evidence of team practice by faculty members, the educational enterprise will lack authenticity.

This conference was the first time that leaders of the five major health professions had come together at a national meeting to examine any subject of such far-reaching implications as interdisciplinary education and practice. For many this was achievement enough. This beginning, however auspicious, is only a small first step. The questions, problems, and issues the conferees raised demand deeper and more extended probing. Without follow-up discussion, conferences, and recommendations, it is doubtful that a truly cooperative effort can emerge. The alternative of an isolated approach to education and practice, with each profession hastening to establish its prerogatives, is no longer socially responsible.

An immediate problem of the greatest importance is the lack of a suitable mechanism to retain the momentum generated in this

conference, to maintain the exchange between leaders of the involved professions, to gather and disseminate information about the subject, to identify new trends and collate examples of interdisciplinary educational programs or team approach to delivery of various types of health care, and to develop a much needed methodology to evaluate the models beginning to emerge in several quarters.

The steering committee feels that a national body with sufficient prestige and acceptance by all health professions is needed to maintain the stimulus for all the health professions to look beyond the limits of their own professional self-interest, to engage the fundamental question: How do we harness the varieties and numbers of present and future health professionals most effectively for the benefit and satisfaction of the people they serve? The Institute of Medicine, by virtue of its multi-professional membership and its concern for problems of national interest in health, would appear to be the most likely body to assume such a task.

Appendix 1

The Educational System for Health Professionals: Its Incongruities

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It certainly was not the intention of the Institute of Medicine in constituting this program to assign me the task of making the case that there are large incongruities in the educational programs for health professionals. I am sure it is not news to this audience that there are inconsistencies, inharmonies, and disagreements in the educational system for health professionals.

As I am inclined to do in preparing a paper, I glanced at the word "incongruity" in Webster's. The definition that struck me as both relevant and amusing defined incongruity as a thing that lacks harmonious or a rational relationship to its environment. The amusing part was the parenthetical explanation which followed the definition. This went as follows: "Victorian incongruities in a typical mid-20th Century setting."

My purpose today will be to briefly examine with you four of what I consider are the major incongruities in the education system for health professionals. None of this will be new. Many of you have been writing and speaking on these subjects in one way or another for the past 10-15 years. Perhaps this fact illustrates the basic incongruity in the education system. In a way it is the

sum of all the incongruities and it must be kept upper most in the minds of the conferees here present.

While there are growing inconsistencies in the educational programs for the health professionals and daily occurrences in the delivery of health services which reflect a lack of harmonious or rational relationship of the educational system for health professionals to the social environment, the basic structure of the educational system has not changed in the last 50 years other than incremental growth and some alteration of the fine structure within the system.

Let's look first at two significant well-known changes that have occurred over the past half century which underlie the first set of incongruities in the educational system which I have carved out for examination. That the science and technology of medicine has advanced enormously and has necessarily resulted in increasing specialization is a fact that needs no further exposition. Less well understood, I believe, is the nature of the shift in the health goals of the publi[illegible] The combination of the two has led to major disharmony between the educational system and the needs and desires of the society that system serves.

For a considerable period of time, the health goals of the health professions and thepublic have been defined largely in terms of specific diseases to be eliminated or controlled. Powerful tools have been developed to accomplish this end. Institutions have been created along with the professional and technical disciplines to operate them. Schools of higher learning have been founded to

further understanding of disease in man and society and to train and educate the professions and technicians needed to control or eliminate disease. A body of knowledge has grown and the conventional wisdom has been recorded in text books.

But the very success of this effort brought about change. The dynamic relationship between the people with their diseases and the professionals trained and motivated to control or eliminate disease became disharmonious. The purpose of our collective efforts in health have changed. It no longer can be measured sufficiently on the scale of microbiology nor accounted for in terms of diseases prevented or mortality rates lowered. The moving tides of change are compelling a definition of purpose as the maintenance of the population at the greatest level of health attainable. There has developed an entitlement to a set of health services which the people believe are of value to their well-being. The measuring rod of accomplishment has moved from one of incidence and prevalence of disease and death to the much less precise and value-ladened indicators contained in the phrase "level of living."

But medical education, spurred by the necessity of specialization and the scientific advances in medicine has zeroed in on finer and finer targets of disease. The bulk of medical education, including specialty training, takes place in the environment of secondary and tertiary care. The physicians that the student rubs shoulders with and who serve as the models for him live and work, for the most part, in the world of secondary and tertiary care. The student rapidly learns that the reward system is one built around the activities in

secondary and tertiary care.

The educational system for the health professions is geared to controlling or eliminating diseases, and more specifically those diseases and conditions which can be controlled or eliminated in a short time span. While I think all would agree that this is part of the equation needed to meet the health goal of maintenance of health of the population at the highest level attainable, I also think you will agree that it is only one element of the equation and success depends on all elements. The environment within which much of medical education occurs is not a comprehensive or balanced environment when measured against the needs for health services.

In a recent article, Dr. Millis had this to say about that environment. "My first concern is for the environment within which such education shall take place. I stress the environment of learning because, if there is one thing which we have learned in the past decade from our thinking and research in medical education, it is that education is a process of learning and not a process of being taught. The environment must then be comprehensive -- that is, both inclusive and understanding.. Included in this setting is the hospital and its seriously ill patients, the ambulatory care institution and its ambulant patients, the health center, and the community.

This does not mean simply that there must be physicians, nurses, dentists, physical therapists, and social workers at work in the institutions. It means that there must be students learning to be physicians, nurses, dentists, physical therapists, and social workers in the same institutions."

The second element which makes for the incongruities in the educational programs for health professionals is this. While the objective of health professions education is to supply the health manpower needed to meet the health needs of the people, in fact the output of the health professions' schools is shaped and molded, for the most part, by the needs of hospital-based specialties to meet the needs of the hospitalized patient. This is quite different than meeting the manpower needs of the community as a whole.

The burgeoning technology of medicine and its resultant specialization has necessarily compelled the development of more and more complex resources. Health professionals require longer periods of training to equip themselves to handle the technology and complex institutions, with their armies of technicians, to deliver modern technologically-based medicine.

It is not surprising, therefore, that the number of physicians in specialty training and the array of specialties conforms with the special requirements of running complex institutions and bears little resemblance to the massive general health services needed by the population. The education system for health professionals is principally geared to satisfying the special requirements of running complex institutions. The manpower needed to meet the general requirements of the population for health services is almost a by-product of the system.

My third incongruity in the educational system for health professionals is based on the rather startling fact that it is not

possible to define medical or nursing education as that which goes on in the respective schools. More startling, I believe, is the fact that the areas of the practice of medicine, the practice of nursing, and to some extent the practice of dentistry and the activities of their various associates, assistants and technicians cannot be defined with any reasonable precision.

Until very recently, it was possible to define medical education as the process that went on in a medical school. This definition is no longer valid. Nor is it valid when the same assumption is applied to nursing education, be it two, three, or four years in length or a community college based, a hospital based, or a university based program.

To illustrate my point, I will stick to medical education. There are several reasons why one cannot equate medical education to the process that goes on in the medical school.

Not long ago, the line demarcating premedical from medical education was reasonably sharp and clear. There was little overlap or duplication. There was also relatively little communication across the line either. Now the line is fuzzy and fading. Undergraduate teaching in the basic sciences has greatly improved and gained in sophistication. It has, therefore, become more difficult, if not impossible, to construct a curriculum of the medical school without a dynamic relationship to the undergraduate curriculum.

Similarly, the line at the terminal end of the medical school education used to be sharp and clear -- the line between medical school and medical practice. Only a brief general internship

separated the two phases. In those circumstances, the content of medical school preparation was, and had to be, closely relevant to medical practice.

Now this line is lost into the long residency period during which the M.D. graduate undergoes differentiation into his specialty practice area. And this differentiation takes place in a setting over which neither the medical school nor the public have much direct control.

Medical schools occupy a middle ground removed from both the raw material -- the student beginning higher education -- and the finished product, the physician who serves society. In this position, the faculty tends unconsciously to redefine its purpose away from the social product of the school. The teacher defines his function and rewards more in terms of his discipline -- for example, physiology -- or his specialty -- surgery, or his special interest, perhaps research. Each man has his own specialized goal which he imparts to his students.

The composite result of this human tendency is an organization with a multiplicity of goals and no unifying mission. Such an organization is a virtual Tower of Babel.

Another way of looking at the relationship of the education of the health professionals to their actual function in society and the mismatch that is apparent is as follows: Not too long ago society's definition of physician was very similar to the medical school's definition of its product. Today, this is not so. Since the advent of specialization as the dominant motif in medicine, it may well be impossible to define the word "physician" per se.

What do you write down in the little box marked occupation? Physician? or do you write "surgeon," or "pediatrician," or "professor"?

The same confusion holds in the definition of a nurse. Have you had the personal experience of hospitalization and in the course of it tried to figure out who among the milling mob in the hallway or the occasional entrant to your room was actually practicing the profession of nursing?

It seems to me that the confusion that exists in the minds of all of us, lay and professional, is that we are no longer able to define the practice of medicine or the practice of nursing, and, increasingly, the practice of dentistry. How can the educational system for the health professionals which proudly says it is producing physicians and nurses and dentists to practice these professions do so if the various fields of practice are no longer definable.

To me, this is one of the most crucial issues facing any attempt to lower the incongruities of the educational system. Little wonder that there are inconsistencies, inharmonies, and disagreements in the system when the functions of the products of the system are ill-defined. The educational process for educating the health professions cannot be defined in terms of its final product. The old axiom that the health professions education of today shapes the medical care pattern of tomorrow does not hold, not even for today.

My fourth and final major incongruity in the educational system for health professionals stems from the fact that the roles of the

various health professionals and the interrelationship of these roles are changing drastically. The resultant instability makes definition of roles difficult.

What are the functions in patient care which are unique to the associate degree nurse? or the baccalaureate degree nurse? or the orthopedist? or the psychiatrist? or the family physician? or the pediatric nurse associate? or the physical therapist?

How do these unique functions relate to one another to produce the health services needed? And what are the functions which are not unique to any of the many categories of health professionals but are shared by many?

It seems to me that the total sum of functions necessary to provide the health services efficiently and effectively to all of the people requires a degree of teamwork between the various and growing categories of health professionals which exists only in rudimentary form now. The incongruity for the education system for health professionals is that it does not exist at all in the learning environment of the system.

In the paper I cited before, Dr. Millis said, "Professionals do not work together by instinct. They learn to work together by learning to play their professional roles together." Dr. Millis goes on to describe that there are settings in which numerous professionals and technicians work where learning to work together cannot be accomplished as these settings are without learners.

I have interpreted this conclusion to mean it is the responsibility of the educational system for health professionals to provide settings

where multiple roles are being learned and understood as a total effort.

Few settings such as this, if any, can be so described. Professionalism, credentialling, and the reward systems within the innumerable categories of health professionals and technicians are a few of the very strong, very rigid barriers which resist change even as the numbers of categories increases almost daily.

I have attempted to outline for you the incongruities of the educational system for health professionals. Returning to the definition of incongruity I used at the beginning of this paper as a thing that lacks harmonious or a rational relationship to its environment, I think it is apparent to all that the educational system for the health professionals is based on a concept of education which had its origin in the Victorian era and that we are trying to adjust this concept to a changing and somewhat strange environment.

I certainly don't have any global answers to the large dilemma presented by the incongruities in the educational system for the health professionals. But I believe answers must start from a candid confrontation with obsolete definitions and assumptions and proceed to an honest definition of the roles of the various institutions involved in the educational process. In addition, the definition of the roles in society of the products of this educational system must be included.

Above all, I am sure that no amount of curriculum study, no amount of experimentation with elective time for students or track systems or any of the other proposals for tinkering with the machinery

will really solve the problem. Some will be useful, but until we have some clear concept of what we are trying to do, we cannot even tell for sure what is useful and what is not.

Appendix 2

Interdisciplinary Education

"Why and How"

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Introduction

Current issues and trends in the delivery of safe, effective, and therapeutic health services are a reflection of the nature and magnitute of social change -- rapidly occurring changes in science and technology, in social structure, intellectual concepts, and economics and political establishments. The signs and symptoms of social stress are clearly evident in the dissatisfactions of consumers of health services as well as in the changing attitudes of health personnel about the scope, purposes, and rewards of their work.

The problems and issues we face in people power for health services are self evident. Although the costs of health care have been increasingly subject to public criticism, the current increasingly significant critical target is that of the professionals (providers and educators) who are perceived to have isolated themselves from the social scene. There is a growing public sophistication about the nature of services required and increasing skepticism about the ability of the professions to make the decisions requisite to an effective health care system. This skepticism is particularly evident in the prevalent attitudes of legislators (national and state) expressed in the leverage exerted through financial support or lack of support for education and research in the health field.

The issues associated with legislative influence are clearly depicted in an article in a current issue of Science.

> Since the 1960's the legislatures have sought to move beyond their old role of simply ratifying or rejecting proposals by medical schools. They have sought in a limited way to manipulate the system. Their interests center mainly on manpower - they want to increase the number of medical graduates, and they want to see these graduates stay in Michigan. They are increasingly concerned with reasons for the decline in the output of family physicians and they are beginning to ask for detached explanations of the cost of medical education. In other words, the legislators are beginning to be more interested in programs than promises. (1)

Educators, in the professional schools, respond by resenting what appears to them to be an anti-intellectual attitude toward university programs; resent the accusations of social isolation; and believe that government staff (elected and appointed) is concerned predominately with numbers of workers and instant programs to the exclusion of quality considerations.

Professional Isolation

The fratricial tendencies of some educators within the health professions have contributed to this loss of faith. Our cold war over territorial boundaries is repeatedly reported in the various trade journals, from platforms of group organized in isolation for self perpetuation, as well as in the public press. The motto on the bonners we were at every

opportunity appears to be a unilateral interpretation of "United we stand; divided we fall." Peer pressure has had awesome consequences on creativity as well as upon interdisciplinary attempts to restructure roles and relationships of existing personnel. For all too long we have, in our educational programs, perpetuated professional isolation and attitudes of "we" and "they" within our students. Our students have experienced diversity rather than university education.

Our public image at the present time is far from that of helping, caring and mission oriented professions.

Manpower for Health

It is clearly evident that today's practitioners require more than the mastery of a particular body of information or a cluster of skills. They require intellectual leverage for continued learning, for modifying practice, and for understanding the social changes that facilitate their ability to function effectively in their occupational and personal lives. Never before have the critical relationships of the science, technology, and art of education and the critical relationships of the science, technology, and art of health care been so evident.

But current approaches to manpower appear to negate any rational system for insuring that health service personnel are prepared and continue to be prepared to provide quality services. Currently there are 125 identified health occupations in the health field, with some 250-300 secondary or specialty designations. (2)

Perhaps I should have stated there were these numbers at the last official count for each day the various publications of the health field announce new types of workers to solve today's problems, specialization is not limited to the established professions but is evident in the spectacular growth of technical specialists and support personnel. The issue in specialization is not that of denying the need for expertness but rather specialization in proper perspective. Specialization must reflect a social consciousness of relationships and responsibility. It is this approach to specialization that is essential and which safeguards coordination in the multidisciplinary approach to problems and needs of the clients served by the specialists.

Dr. Lowell T. Coggeshall formulated the problem when he asked a similar conference group "of health professionals were being so narrowly trained that they were merely acquiring an encyclopedic knowledge rather than acquiring the ability to make appropriate decisions for broader medical services or as leaders of future health teams."

In the process of formalizing new specialists, for circumscribed areas of practice or for performing certain tasks within a specialty or area of practice, consideration has not always been given to the possibility of occupational obsolescense or of geographic career mobility. Same tasks or procedures used upon current technology can be predicted to have a limited time span of significance and others are not carried out frequently enough in other than the medical center to guarantee a position in the average community health center.

The paradox is that these same social forces that tend to create more and more specialists in health service tend to reinforce the need for generalists. The type A Physicians assistant is illustrative. Established in 1965, the Duke Physician Assistant Program was originally designed to train assistants to extend the services of general practitioners.

Immediately upon graduation, the physician assistant is in considerable danger of being swallowed whole by the whale that is our present entrepeneurial, sub-specialty medical practice system. The likely co-option of the newly minted physician's assistant by sub-specialty medicine is one of the most serious issue confronting the PA.[3] The implementation of an effective system of care cannot be achieved through fragmented, isolated approaches to manpower development. Nor can an effective system of health care be achieved until and unless established health care practitioners establish a mechanism which will insure continuous assesment of roles and relationships for primary care, emergency care, long-term care as well as for acute care for individuals, families and selected population groups. For negation of critical areas of health services by influencial individuals within current vested interest groups has led to the development of new careerists in isolated problem areas. I am not implying that under certain circumstances a new "breed" of health worker may not be indicated but I do state quite bluntly that the need for a new occupation should not be based upon the negligence of established workers to change with the times. We cannot

continue to be tolerant of "feather bedding." If a group becomes obsolete by design (not willing to change) then the group should be replaced and not supplemented by another type of worker. The struggles and issues associated with development of Health Maintenance Organization reflect the problems of changing a system when the pool of leaders is dominated by those with an over reaction to an acute care system. H.M.O.s are expected to place more emphasis upon early treatment and an ambulatory, rather than impotent, care as well as emphasis upon preventive care and rehabilitatic series. This emphasis is clearly a shift in national philosophy and policy. For legislative programs and federal and state support for health care series and institutions have predominately been philosophically oriented to the premise that people will become ill or disabled and therefore programs and services have been based upon an illness and disability syndrome.

Why is it that health maintenance is so controversial? Does maintaining a state of willness represent scientific or program complexity beyond the realm or interest of those currently in control? Is the same men of health personnel required for an effective program of primary care as for tertiary care? Is there a difference? Can not the antagonistic reaction to Health Maintenance Organization be treated to a predisposed organization plan for a program as yet ill defined?

Interdisciplinary Education

More years ago than I care to admit°I attempted to alert nurses and physicians to the need for educational programs that would promote the

concept of interdependence in practice. I have been particularly fortunate in my own professional career for I have had continuous opportunities to be involved in multi-disciplinary situations at the policy and program level. But I still encounter all types of obstacles at the policy and program level when dealing with individuals or groups dedicated to independence rather than interdependence. My premise is that barriers to inderdisciplinary education are predominately a reflection of a value orientation; the values are holds for his or her potential contribution to a total mission as well as the perception are has of value of others for his or her contribution.

Certainly, everyone in this audience will agree that it is philosophically desirable and economically feasible to identify the common base of knowledge and the universal skills inherent to effective practice of practitioners in the health field. Experience has already demonstrated the effectiveness of this approach in the biological sciences. Courses developed fn units or modules allow for breadth and depth as well as selected emphasis for the various disciplines. As programmed learning becomes more available and independent study substitutes for rigid and inflexible approaches to course construction interdisciplinary education will become an absolute. Problems only appear to be insurmountable when our attempts to approach interdisciplinary education through the professionalization of subject matter for a particular group of students.

I have found Feinstein's classification of three types of human data essential for clinical judgment a useful frame of reference for curriculum analysis.(4)

1. data which describes a disease in morophologic, chemical, microbiologic, physiologic, or other impersonal terms.
2. data which describes the host in whom the disease occurs.
3. data which describes the illness that occurs in the interaction believe the disease and its environmental host.

In using these data for planning treatment, the clinician's reasoning is broadly defined by Feinstein into two categories: therapeutic and environmental. The therapeutic decision deals with the mode of treatment -- the environmental decision deals with the management of the host. The therapeutic decision answers the question, "what is the best treatment for this particular ailment? " And the environmental decision answers the question, "How should that treatment be managed or modified for this particular person?" (5)

The approach to curriculum development therefore must be through analysis of the potential scope of practice and the nature of clinical judgments expected of the various health care professionals. Current approaches to curriculum development through a task inventory of the techniques or procedures that may be assumed by various groups is to negate the fact that change through advances in science and technology is inevitable. I have heard it predicted that the half-life of a physician and engineer following graduation is five years. One cannot afford to educate for obsolescence.

Closely associated with the nature of clinical judgments are the values one subscribes to for a shared culture of health. Margaret Mead's focus on the essential nature of communication should alert us to toehr potentials for change in our educational systems.

> We are becoming acutely aware that we need to build a culture within which there is better communication -- a culture within which interrelated ideas and assumptions are sufficiently widely shared so that specialists can talk with specialists in other fields, specialists can talk with laymen, laymen can ask questions of specialists, and the least educated can participate, at the level of political choice, in decisions made necessary by scientific or philosophic processes which are new, complex and obstruse. (6)

Any approach to the development of a shared culture of health must result in opportunities for faculty as well as students to have shared experiences in the analysis of the phenomena of cure and shared experiences in the provision and evaluation of care. Faculty involvement is prerequisite to student involvement.

The consequences of collaborative efforts on the part of medical and nursing faculty in the development and conduct of programs to prepare nurses for extended care roles (Premir and Pediatric Nurse Associate) has been clearly evident in our setting. Changes in traditional values and changes in roles and relationships are clearly evident. Studies in these programs are experiencing a quite different educational melieu

than traditional students enrolled in the traditional programs of our medical center. Students and faculty are learning together. Quite frankly I do not know who is educating whom, but everyone is learning. What more can we ask from any educational endeavor?

References

1. John Walsh, "Medicine at Michigan State (1): Educators and Legislators", Science, September 22, 1972, p. 1086

2. U.S. Department of Health, Education and Welfare, Allied-Health Manpower, 1950-80. Public Health Service Publication No. 263, Section 21, Washington, D.C.: Government Printing Office, 1970, p. 1.

3. Alfred M. Sadler, Blair L. Sadler, Ann A. Bless, The Physician's Assistant - Today and Tomorrow, Trauma Program of the Department of Surgery, Yale University School of Medicine 1972. p. 28.

4. Alvin R. Feinstein. Clinical Judgment, The Williams and Williams Co. Baltimore, 1967, pp 24-25.

5. Ibid, p. 25.

6. Margaret Mead, "The Future as a Basis for Establishing a Shared Culture", Doedalus, Journal of the American Academy of Arts and Sciences, XCIV (Winter 1965) p. 136.

Appendix 3

Report of the Proceedings

Opening Session

Dr. Edmund Pellegrino, conference chairman and vice president for the health sciences of the State University of New York at Stony Brook, opened the conference with some introductory remarks. (See chairman's introduction)

Other speakers were Dr. William H. Stewart, chancellor of the Louisiana State University Medical Center, and Dr. Eleanor C. Lambertsen, dean of the School of Nursing of Cornell University-New York Hospital. Dr. Stewart spoke on the incongruities in the educational system for health professionals. Dr. Lambertsen addressed her comments to the "whys and hows" of interdisciplinary education. Though the texts are contained in the appendices, the major points of each speaker were as follows:

Dr. Stewart contended that despite basic flaws in the health care delivery system and basic shifts in the health goals of the public, the basic structure of the educational system had not changed in 50 years. He also pointed out that while the objective of health professions education is to supply health manpower to meet all the health needs of the public, the output of the schools still is shaped primarily by the needs of the hospitalized patient. A third incongruity, he said, is that specialization and the shifting roles and functions had produced a situation in which the various fields of practice were no longer definable and in which there was scant effort on the part of educational institutions to respond to this condition.

"It seems to me, " Dr. Stewart concluded, "that the total sum of functions necessary to provide health services efficiently and effectively to all of the people requires a degree of teamwork between the various and growing categories of health professionals which exists only in rudimentary form now. The incongruity for the educational system for health professionals is that it [this teamwork] does not exist at all in the learning environment of the system. Above all, I am sure that no amount of curriculum study, no amount of experimentation with elective time for students or track systems or any of the other proposals for tinkering with the machinery will really solve the problem. Some will be useful, but until we have some clear concept of what we are trying to do, we cannot even tell for sure what is useful and what is not."

Dr. Lambertsen spoke on three main themes: professional isolation, health manpower and interdisciplinary education. "For all too long," she said, "we have, in our educational programs, perpetuated professional isolation and attitudes of 'we' and 'they' within our students. Our students have experienced diversity rather than university education." With respect to manpower she expressed the view that current approaches "appear to negate any rational system for insuring that health services personnel are prepared and continue to be prepared to provide quality services." Noting that there were 125 identified health occupations with some 250 to 300 secondary or specialty designations, Dean Lambertsen made the following statement:

"The implementation of an effective system of care cannot be achieved through fragmented, isolated approaches to manpower development. Nor can an effective system of health care be achieved until and unless established health care practitioners establish a mechanism which will insure continuous assessment of roles and relationships for primary care, emergency care, and long-term care as well as for acute care for individuals, families and selected population groups."

Drawing from the writings of Margaret Mead, Dr. Lambertsen urged the development of "a shared culture of health" that would result in clear and closer communication among the various professions, between students and faculty, and between the professions and the public.

Discussion Groups

Although 12 groups were assigned six topics for discussion, there were four basic questions which seemed to attract the most attention. Those questions and the manner in which the groups responded to them are as follows:

Why Do We Need to Educate Teams for the Delivery of Health Care?

The most direct response to this question came from one participant who said:

"The reason for a team is to do a job you cannot do with a single person in order to better provide the health care people need and have a right to receive."

On this one point, there appeared to be extensive agreement among the participants at the conference -- both those who were asked to discuss this topic and those who were discussing other topics. A few participants, however, felt the conference should at least go on record as recognizing the possibility that health care teams might worsen or at least not make measurable improvement in the availability or quality of health services. But the overwhelming number of participants accepted, on principle, the need for teams and the need to educate health professionals to work in teams. Their view was that if the health professions were to fully discharge their public responsibility and provide continuous, comprehensive and economical care, if they were to make optimal use of existing health manpower, then health teams, while not necessarily the answer to all problems in all situations, nonetheless emerged as one answer with great potential.

In expressing a need to educate teams for the delivery of health care, the discussion groups recognized, often by implication more than explicit statement, that the health team was

more a concept than an operating entity. To be sure, there were health teams in existence in a variety of clinical and organizational settings. Operating room teams, intensive care teams, and coronary teams were examples. But in the areas where teams were seen as most necessary -- primary, preventive and long-term care -- there were few models participants could cite as illustrative of the cooperative and collaborative efforts among health professionals they sought to advance.

The need for the team approach was seen arising from two trends in health and medical care: the great increase of scientific knowledge and technology during the past 25 years and the heightened public expectations of the past 10 years. The individual professions may have been able to lead isolated existences in the past. They could not do so in the future. In the 1970s and beyond, interdependence would be the name of the game. "There is a great discrepancy," said one person, "between the manpower we have and the needs for health care. The alternatives are to produce more doctors or to begin making more efficient use of the manpower we now have and develop a team. The first is impractical, so we have no alternative but the second."

Said another:

"We have a long way to go with the team idea. But the point is this. We have finally begun to see that it has merit. I do not think we have to get hung up on issues that will have to be resolved at a later date or be overly concerned that we are

on shaky ground. We are on firm enough ground to begin moving the idea forward."

General agreement on the public benefits that could result from health teams, however, was only one answer to the question. There was a second. While health teams were judged to be necessary, the participants also felt there were no established mechanisms or procedures in the vast majority of institutions that educated health professionals which one could bring to bear in order to equip students with the skills, the knowledge, the understanding and the experience that would permit them to work in a team setting or in a setting that used the team approach. Thus, the second reason for educating health professional students together was to break down the barriers of professional isolation so that health professionals could in fact be able to work in teams.

"One of the real problems that medical students have," said a physician, "is that they finish their entire training, including their graduate work, and they never understand the skills of those around them. They really do not. And because they do not understand those skills they do not understand the opportunities for patient care that might be provided by such people as physical therapists, occupational therapists and the like."

Another physician agreed:

"It is not so much the need to learn a technique that some other group has but of having an understanding of what other professions do in relationship to the whole product that you have.

We have tried in two settings to teach medical students what nurses do. One was in the care of the newborn premature infant, where obviously what the nurse does is far more important than what the physician does. The medical student did not understand what happened when a child entered the premature nursery. They did not understand what all those people were doing in there and what relationship they had to the fact that the infant was going to come out alive at the other end of the line.

"The other was in the orthopedic ward where you have all the old men and women with fractured hips who get surgery. The surgery is fascinating to medical students, obviously. But they don't understand that an awful lot of the outcome of that patient depends on what other professionals and occupational groups do for that patient.

"As a result, I am convinced that a physician must know what happens in a health or medical care setting. I don't think he has to know how to do everything, anymore than everyone needs to know how to repair his own car. But he should know enough about these various situations so that he at least can talk with somebody about it."

To which a pharmacist responded:

"It works in reverse, too. Pharmacy students don't know what they have to offer the physician. They do not know exactly what they should know in order to work in a collaborative setting with the physician. They do not know how to utilize their backgrounds because the two professions rarely come into

contact with each other."

In other words, if health professionals were to work in team settings, they needed to be trained in this mode. And wherever or whenever possible they needed some common educational experience and exposure to team concepts and practices.

They needed to understand, the participants said, that in order for a team to function properly, each member had to know the skills and talents possessed by other members of the team. More than that, teamwork required a willingness to respect the knowledge and, through experience, a willingness to trust the professional judgment of other team members. Health teams had to be educated so that professionals would recognize areas of expertise other than their own and the manner in which that expertise could contribute to solving a problem.

In answering the question of why do we need to educate teams for the delivery of health care, the participants remarked fairly often that they did not expect everyone would work in teams or that a single type of team would become the dominant mode of practice. The health professions, they cautioned, should not follow a uniform pattern of organization and delivery. Their objective, they said, was that institutions graduate professionals who knew the value of teams, had some experience with them, could initiate them when necessary, and could enlist the aid of other specialized people.

Discussants also returned to the functional definition of the "team" offered by Dr. Pellegrino and agreed that, according to the criteria used, there were two types of teams: the fixed

and the flexible; the one, a group of people who dealt with a particular type of problem or in a specific situation on a regular basis, the other, a team with varying composition. At least a tentative agreement was reached in one group that all members of a "team" would not necessarily need to be in the same location or even in the same general geographic area. More important than physical proximity was the nature of the existing relationship among the various professionals.

Inasmuch as educating teams was educating health professionals to change their traditional attitudes and patterns, or at least the patterns and attitudes that had been traditional for the past 50 years (since the Flexner report established the scientific basis of medicine and led the way for an emphasis on cooperation and interdependence), the groups asserted that, as one person put it, "the physician is the critical person in the sense of change." His dominant and predominant role in health care would no longer be, as one physician put it, "automatic and autocratic." If teams were to be effective, then each member ought to have "some kind of guaranteed input" into the decision-making process. Not only did that make sense in an organizational framework; it was structured protection against any one person making a decision that, in the judgment of the professional with more knowledge, might not be appropriate. Unless this "guaranteed input" existed, said one person, the group would not be a team. "It would," he said, "be a coordinated series of service functions. This is not necessarily bad, but I think we are trying to define the team, and the definition would have to embody this feature."

In one group, there was a prolonged discussion about the issue of the captaincy of the team. A dentist proposed that for the time being the physician be designated as the captain or else the team concept would not get off the ground for another decade. A nurse disagreed on the grounds that:

" . . . the moment you start saying there is no question in our minds if we want the team approach that the physician is captain you might impede what I would like to see as a good flow of delegation with the actions on the part of other health personnel who really can play a part. To me, (designating the physician as captain) is too much a part of what we have had for years and years and it worked very badly."

The position of the dentist who made the proposal in the first place was as follows:

"The reason we are in the difficult position we are in today in the health care system is the fact that the physician has not been a responsible leader, and it is because he has not been responsible that we get the emotional or quick reaction that he cannot be the leader. We are dissatisfied with his record of leadership. He has not earned leadership status and now we think we can take it away from him.

"I can tell you that nurses, pharmacists, allied health people and dentists can come to Washington every month and sit down and talk to each other, but I tell you it is not going to get done. The leadership must come from medicine.

"I am talking about, clearly, a new kind of leadership because the physician has not been a responsive leader. He has not

demonstrated his ability to lead well. He has not earned that position. It just happens, though, that in this society it must be delegated to him because no other approach is going to work. What is holding back the team approach is that the physician feels threatened. He hears these kinds of conferences and people suggesting they are going to take away his leadership, and he has insecurities. Consequently, they sit on this idea.

"From the practical standpoint, I make the plea that we not be hung up on this (definition of shifting captaincy). The place that is most difficult in this regard is, I think, with the nurse and for very practical reasons. We are talking about how a physician should ask a nurse and not tell a nurse. It can be done. But to return to the original question of why educate, the answer is to help prepare the medical profession for the leadership they must assume. That is the answer to question number one of this conference. Without that education, without preparing the physicians to assume leadership, we are not going to go."

In summarizing its discussions, one group reiterated its reluctance to look at health teams or the process of educating people to work in teams as "the only answer" to the myriad problems confronting the health care system. As the chairman of the group expressed it:

"I find it extremely easy to point to the fact that our present system in education and health care delivery is not working adequately. But I also find it difficult to say that educating teams or educating people to work in teams is going to

resolve those problems. To get a convincing answer is a real problem. Yet, at the same time, we seem to have a strong intuitive sense that teams will produce certain benefits. These are improved patient care, improved opportunity for lateral and vertical mobility among health professionals, improved communication among team members, improved respect from peers, improved satisfaction from your own work, improved capacity of team members to adapt to changing needs."

Both groups conveyed the sense that their answers to the question were not as substantive or cogent as they would have wished. They attributed this primarily to the fact that health teams and interdisciplinary education were relatively unexplored areas of study and analysis and that, in the absence of specific data and information, they could not move the discussion ahead any further. In this context, one person suggested that an answer to the question "why" might be to have the performance and effectiveness of various types of teams evaluated and assessed.

Who Should Be Educated to Serve on Health Delivery Teams?

At the opening session, Dr. Pellegrino indicated this question probably was misleading. The steering committee's intention, he said, was not to have the discussion groups attempt to define, in an elitist sense, which professions should be permitted to work in teams and which should not, if indeed such a distinction should even be made. Their purpose was to engage the groups in a functional analysis of various types of health teams in various types of settings and then to come to some conclusions, if only tentative and preliminary, about the composition of those teams.

This question proved difficult for both groups. For while conference participants could arrive at generalized agreement on general questions, once the discussions reached a level of specificity, as this question did, the discussion groups found themselves limited by the format of the conference and a lack of information about health teams. A few hours of informal conversations was not enough to reach even any preliminary agreement about the functions and composition of a particular type of health care team. As for the lack of concrete information with respect to health teams, one person made the following comment:

"We really are babes in the woods at looking at things from this point of view that I don't know if we can grab hold of that question. It might be a simple matter at this point to say that

we need more information and knowledge about the various categories of problems health teams have focused on or could focus on. We need more research also on the needs of specific populations being served and the types of teams that have worked and can work in those settings."

The chairman of one of the discussion groups saw the problem as a cultural one as much as anything else. "One of the difficulties I think we continually encounter," he said, "is the fact that we know that things should be changed and that we are caught up in a status quo situation. We know that we should be more analytical and that we should identify these (health) needs. We should be able to identify these problems and structure programs directly to meet these needs. The problem is that we are entrenched in a system that has gotten hold of all of us and each one of us is bogged down by our own traditions. The point is we have to start where we are. We can't jump over a period of ten years in time. We have to work ourselves out of the box we are in."

The groups tried various approaches to the problem which, though they were unable to develop them in any depth, they felt would be worth exploring in some detail. One group discussed the Garfield model of caring for the "worried well" and reached agreement that a team working in this area, where the tasks were essentially regular and periodic screenings for problems in people who normally were not sick, the team would not necessarily have to include either a doctor or a dentist. Some effort was made to discuss the composition of a primary care team for sick

patients in which the patient's initial contact would not be with a physician but most likely with a nurse, a physician's assistant, or perhaps a pharmacist. The group also felt that a functional analysis of primary care would indicate that nurses and pharmacists possessed the skills to play larger roles and assume greater responsibilities; or if they did not have these skills, they could gain them relatively easily. A third approach to the question was the suggestion that the composition of teams be defined for specific populations, such as 10,000 people.

In spite of their expressed difficulties, both groups did reach common agreement on one point they felt was basic to further discussion of teams. "We have said something," said one participant, the dean of an allied health school, "which I find encouraging and important. We have said that the design of the team really is based on its functions and in what it has to fulfill and the problems it has to solve." In other words, health teams ought to evolve from, and must inevitably be a result of, the needs of patients, bearing in mind that patient needs may vary from setting to setting and from time to time. Thus, the composition of the team would vary. A team might be as small as two people and as large as 100. Either way, teams should not be constructed, nor their composition defined, solely on the basis of an abstract analysis of roles and functions. All teams, or team models, should evolve primarily from the needs of the population to be served and the resources of the setting.

Both groups interpreted the question "who" as an opportunity

to discuss the personal traits or characteristics that people who work in teams should possess and that health professional schools should look for when they admit students. These were defined as a willingness to give of one's self, an ability to work in a situation in which roles often are not clearly defined, a tolerance for ambiguity, and a feeling of not being threatened by the knowledge of other people in other professions. The traits that would be involved in the team process was judged a "fruitful" area of research.

They also agreed that two answers to the question "who" were: the faculty and the patient. Teams, or interdisciplinary education geared toward demonstrating the common basis of all the health professions, simply could not proceed without the commitment of the various faculties. Furthermore, one should not expect a faculty from a single professional school, let alone more than one, to automatically participate in a concept that went against the grain of the traditional separatism of institutions and departments within schools. The participants also expressed a concern that it would be "unfair" to put faculty members in a team teaching situation without preparation. One suggestion was for consultation teams that could help an interdisciplinary teaching team work out its problems. Consultation teams also could be useful to student teams as well. With regard to the patient, the groups indicated that recipients of health care should also be considered members of the health team. Nothing further was said on this subject, but in another group one of the participants

made the following statement:

"One of the greatest problems in setting up a good family practice residency is to create the appropriate clinical environment where people can learn. And the good family practice is a team enterprise. That is to say, there are interrelationships of physicians, but there are always some pretty good nurses, a laboratory technician and maybe a medical social worker. Then when you throw in a medical student, the patient becomes extremely restive. Part of the problem is the necessity to always remember that the patient is part of the team, and that therefore when you are talking about education for team enterprises, you also have the task of informing the patient."

At the conclusion of one group, a participant expressed his view that there was no need to train any new professions to work in a health team. "The components are here," he said. "We have them already. It is not a matter of educating more people, or of creating a great number of new kinds of people. The problem is to get them to work together as a team, to function as a unit. There are large numbers of well-trained individuals that I have to work with every day, that all of us have to work with on a day-to-day basis. We have them in our hospitals, our schools, our clinics, our health science centers. The trouble is that they are all fragmented from one another. They do not get to work with one another, and they do not get to know one another. That is where the problem lies."

How Should We Educate Students and Health Professionals in Order That They Might Work in Teams?

This question was seen as the heart of the conference, for if specific recommendations and strategies were to be developed that would be of use to institutions looking for guidance in this area, they would, in all probability come from the four groups asked to discuss this question, two of which focused on the classroom and the curriculum and two of which concentrated on clinical training.

Discussions of health teams and interdisciplinary education frequently center around the idea of a core curriculum, a body of knowledge that is common to all the health professions and which might be taught to groups of health professionals at the same time. Usually, the basic sciences are judged to fit this category, and the assumption is that this core curriculum will provide the students with a common language and the basis for communication which they often lack.

But the words "core curriculum," like the words "health team," mean different things to different people. To one person, a core curriculum may be a group of professionals taking the same set of basic courses. To another it may be a basic course in anatomy or physiology which is structured by levels, or broken up into modules, and in which students from different professional schools participate according to the requirements of their discipline.

However, some key points did emerge from the discussion, which, if not representing a consensus, at least represented

positions that people in the groups felt ought to be presented for further discussion.

One was that the conference "should not promote the idea that there is some real sort of completely basic common core" to interdisciplinary education. To do so, it was argued, might suggest that interdisciplinary education was nothing more than training professionals for a set of lowest-common-denominator skills. The idea that everyone should know what all the others know, that they should be able to shift roles and functions at the drop of a hat, was precisely what interdisciplinary education should not promote and what a team should not be. The purpose of interdisciplinary education and the value of a team, it was argued, was that each person in the team, or in the educational experience, has something unique to contribute. "Interdisciplinary education is not whether students all go through the same course together," said one person, "but whether the educational experience interdigitates with the rest of health care." And another put it this way: "The team works because each person has something unique to contribute. You can't train them all at the same level. There are some common elements but they differ according to discipline and specialty. We can place too much emphasis on common core curriculum and overstress the importance of two people sitting in the classroom together."

What did emerge from the discussions about the core curriculum was a feeling among a number of participants that the core curriculum be defined conceptually rather than factually. On this

subject, one participant expressed:

"The talk of a common language and core curriculum is often misleading because a major problem in the biological sciences has been that people learn terms they can parrot back. We ought to talk about ideas and not language. One of the problems I think is intrinsic in the way a lot of medical education developed in this country is the idea that people were carrying around large bodies of information in their heads and then you tested them always, to find out how well you could bring it out at any given moment. This is obviously something that has to disappear with the sort of information exposure that is going on now. All emphasis on retention of specific information as being a major focus of the education sort of comes out of the language idea and has to be very seriously downgraded, because it is the concepts and the principles that are the core things one teaches. The degree to which you must hang facts, the number and the terminology is what will differ for different groups."

If one accepted the idea that concepts and principles were the core, then, said the person making this argument, it would be easier to structure levels and modules for the various professions.

Another general point that emerged was that health science centers, or any institution in which there was more than one professional school, might want to consider having a common faculty. Several people observed that the first answer to the question "how" was: get some unanimity and agreement among

the faculty; if the faculty is not convinced, then interdisciplinary education may merely be a fad for one semester or a summer school session. A common faculty, it was pointed out, would not result in the education of health teams. Nor would it necessarily produce interdisciplinary education. But it could create a situation in which a university, by taking such action, would indicate that the basic science faculties, for instance, did not exist primarily to serve a single profession above all others, i.e., medicine, but that they existed to serve all the professional schools equally. If nothing else, that would establish the principle of equity among the professions. More important, said the proponents of this idea, it might tend to create an environment in which the faculties could begin to see the interrelationships among the professions and develop courses or programs that would be geared in this direction.

Another issue upon which at least one group reached a consensus was that some attention be given in curriculum design to improving opportunities for vertical and lateral mobility among health professionals. However, this objective was judged to be secondary to the basic objective of developing common or shared educational experience in order to improve the cognitive and affective skills of students.

In discussing how students might be brought together in the classroom for educational experiences that were common to them all, most of the participants were quick to point out that placing students in the same classroom would not necessarily be

of any particular benefit and might even do some harm. Comment was made about unsatisfactory experiences along this line. Accordingly, a view developed that perhaps the most fruitful route to go would be to focus on new areas that were of common concern. If the basic science courses were difficult to unravel, or if educators felt ill-equipped to teach other disciplines at this point -- both of which were mentioned often -- then perhaps there could be some agreement that all health professionals needed greater exposure to the social and behavioral sciences and that they needed exposure to these disciplines early in their training. This in turn led to a recommendation which was common to many groups: the development of a course in the health sciences which would focus on the social and political context in which the health professions existed, the major public issues, the economics of health care, the common heritage that the health professions shared, and the strengths and weaknesses of the American health care system. The course could also deal with the changing nature of health care practice, trends in organization and delivery, and with the interdependence among the professions. It could explain the various theories about health teams or cooperative working arrangements and introduce students to concepts of group dynamics and organizational behavior. Various models of health teams could be explored and analyzed.

Again, no one was in a position to specify exactly how the course might be structured or give assurances that it would have the intended effect of introducing students from different disciplines to each other, in order that they might view their

educational experience as a cooperative rather than a competitive effort. Here, as with every suggestion that was made, there were some doubters. But there was a consistent pattern in several groups, including some who were not asked to discuss the curriculum, that two guiding principles for interdisciplinary education, or education that would prepare students to work in health teams, ought to be: (1) exposure to an interdisciplinary effort, defined either as interdisciplinary in student or faculty composition, or both, at the earliest possible time; and (2) an emphasis on the social and behavioral sciences.

While the classroom was recognized as the vehicle through which common educational experiences could be introduced to students at the earliest point in their professional training, the clinical experience was recognized as the setting in which it would be easiest to begin educating students in the realities of the health team approach. Numerous people commented that when students from different disciplines were brought together in a task-oriented situation, i.e., a patient care setting, they exhibited a greater interest in learning about how their skills and knowledge did in fact interdigitate with those of students in other disciplines in order to achieve better patient care. The classroom was often too abstract, even too boring. "Training," said one group chairman, "seems more valid at the point where they begin to apply their clinical skills, where core teams can be put together for the purpose of learning how you actually begin to deal with the delivery of health services. It seems

to me that what you want to end up with is a group of professionals who can function together in the clinical setting. You have to start training them together in the pre-clinical years. But the main thrust should come in the clinical years."

Another proponent of emphasizing the clinical training, a nurse, made this statement:

"This is a good place to start. We do not even have to worry about elective time. We do not even have to worry initially about revising all of the schools' curricula to follow a certain pattern and come up with the didactic as well as the clinical. Maybe clinical practice is the way to start, not just in one setting, but with a group of students who could have their clinical practice together in all settings all the way through their professional school life."

The manner in which a particular institution chose to organize a team in the clinical setting was judged less important than the need to acknowledge the experimental nature of team training and to develop some strategies for putting the concept into operation. "It seems to me," said one person with considerable experience in the area and commitment to the concept, "that this whole business of how to make this departure is difficult enough that it should be done as a flat-out, acknowledged experiment in various academic health centers, with the recognition that in developing the experiment, one is trying to see if it will work and what the problems are in developing it."

From that statement, one group developed a six-point strategy

for the development of team teaching in health centers:

1. Be direct and open about developing an experimental program, and emphasize its experimental nature.
2. Choose a clinical setting which is real and yet of small enough proportions to be manageable.
3. Identify faculty from each discipline who are convinced of the merits of the experiment and can work together.
4. Obtain approval from the faculties' academic chiefs for their involvement in the experiment.
5. Offer courses to students only on an elective basis, but be sure that students taking the courses know that their performance will be evaluated in detail.
6. Utilize appropriate predictive personality tests prospectively in order to assess their validity for selecting potential team workers and to validate any attitudinal changes which the interdisciplinary experience produces.

The same group also formulated a set of instructional goals for educating health professionals in the team mode in the clinical setting. Essentially a restatement of points made by all the discussion groups, regardless of assigned topic, they were the following:

1. Each student should acquire an understanding of the particular skills and knowledge which students of other professions possess.

2. Each student should learn the rationale of the processes which every other student utilizes in obtaining data from, and providing services to, the patient.
3. Each student should learn to accept data from every other student and utilize that data in making diagnostic and therapeutic decisions.
4. Each student should recognize his own limitations as well as the limitations of every other student and of the entire team in dealing with the myriad complexities of patient care.
5. All students should gain confidence in their ability to delegate and share responsibility for health care services to the patient.
6. Students should learn to be comfortable with the changing team leadership structure appropriate to the needs of patients as they progress through their diagnostic, therapeutic and rehabilitative processes.
7. The entire team should learn to utilize various members to maintain responsible surveillance of the health status of the people in their community.

Although all four groups spent most of their time discussing particular courses or clinical arrangements in which students from various professional schools might share a common educational experience, the main thrust of their comments, which some acknowledged directly and others only hinted at, was that the fundamental problem was how to change attitudes and values. The comments of one participant, a physician, who felt that medical

education placed too much emphasis on competitive values, was pertinent. He suggested that one method of approaching the issue would be to look at the manner in which the biophysical sciences had developed and where nearly all the major research in biophysics and bioengineering is interdisciplinary, in the sense that it is teamwork that involves specialists from the various disciplines.

"They have come together," he said, "not because they have been trained from the beginning in a common core of knowledge, but precisely because they recognize the importance of the contribution that each other member of the team is going to make to the solution of the common problem. They bring to bear on this problem not only their own expertise but also a degree of trust that every other member of the team is as good as they are, has his specialized knowledge, and they are prepared to learn from him and from other members of the team.

"It seems to me that we are diverting ourselves here on how to educate students in order that they might work in teams; the first thing we have to try and analyze is how we educate students to have trust in one another and in the specialties that other members of the team will bring to bear.

"It is no good trying to teach a sort of common denominator and hoping that because everybody knows everything about everybody else's job, therefore they will work as a team. Far better would it be if each brings his own specialty and his own specialist knowledge to bear, and trust the other to have specialist knowledge and expertise.

"So I would push the process of education a good deal further back and ask how we can inculcate trust between members of an ultimate health team. It seems to me that the present system of education for the health professions works precisely to defeat any concept of trust between members of the different professions and even, indeed, between members of the same profession."

What Are the Requirements for and Obstacles to Educating Health Professionals to Practice in Health Care Delivery Teams?

These questions were alternate sides of the same coin. Mention of either a requirement or an obstacle was an implicit comment on the other, and often an explicit statement followed. The four groups discussing these questions addressed themselves both to the delivery and education systems, on the grounds they were interrelated and of common concern. The groups also pointed out that some of the changes recommended involved fundamental behavior changes. As such, they would be difficult and long-range in nature. But no recommendation was considered so difficult as to be unattainable, given sufficient public and professional understanding. Many of the recommendations made by these discussion groups already had been made by other groups. These included beginning common educational experiences in the clinical years, and developing a commonality of interests through new courses in such areas as medical economics, the social and political bases of the health care system, management principles and theory as it relates to health care, and trends in the organization and delivery of health care.

Beginning from the educational system, the groups felt the first obstacle was organizational: the geographic separation or physical isolation of the various schools for the training of health professionals. Estimates were made that as many as 50 medical schools and 50 pharmacy schools existed without any established relationship with any other professional school.

In other instances, schools in a single location often were in different buildings or widely dispersed throughout an area, a situation that also mitigated against even such preliminary actions as the sharing of laboratory facilities or the establishment of informal contact among students of different disciplines during non-academic hours.

One group recommended a policy statement to the effect that "no independent educational institution should exist without organic links to a health sciences center where training for team health care is occurring." The group defined an "organic relationship" as one that was "functioning, living, responsive to change, responsive to institutional problems." It was "more than formal," and should be a relationship in which large health centers would not swallow up community college programs in allied health which had developed programs in technical fields because "others had been dragging their feet for a long time."

Looking upon this in an evolutionary sense, the groups suggested that perhaps after an appropriate period of time all such health centers with which other institutions had established organic relationships should conduct some common training at both the clinical and didactic levels; and that each center should include, at a minimum, a medical school, a nursing school, a public health/social work component, and some allied health professions. "I think what we are saying," one person observed, "is most significant with regards to schools other than medicine. We are saying that the nursing school cannot exist by itself.

A medical technician training center should not exist by itself. It is nonetheless significant for medical schools because we are also saying they should have other schools in the same center with them and that those schools should be on a par with the medical school." The establishment of such relationships was viewed as creating the institutional mechanisms that could result in settings for training teams in ambulatory care delivery, something one participant felt was "the biggest missing link" in the current educational environment.

A second area of obstacles, and one with a symbiotic relationship to the organizational difficulties, was the behavioral obstacles. The extent to which organizations and institutions reflected the behavior of the individuals within them or created certain types of behavior could be debated endlessly. But all 12 discussion groups felt that a basic obstacle to developing common educational experiences was professional rivalry and jealousy. Faculties often wanted to maintain their separate identities. So did students. However one defined it, the major obstacle was, as everyone from the first to the last speaker mentioned, the barriers that had been erected between the professions over the past 50 years. For many participants, a surprising byproduct of this tradition was that, while they themselves felt committed to interdisciplinary education and health teams, they also recognized that they knew little about other professions. "In terms of patient-care management," said one nurse, "we don't really know what each of us can contribute

at this point. We have stereotyped ideas about appropriate, traditional roles, but we do not really have a concept of what knowledgeable people in each field could contribute."

A third obstacle was the fear that health team education and delivery might have the effect of making the medical profession even more dominant than it was at the present time. Several participants cited instances in which they had worked with medical schools to develop cooperative programs, but lost whatever influence they thought they had once the program was funded. However, said one participant, this would not be insurmountable, provided some common agreement was reached on the issue of team captaincy. "If the concept that the physician is the captain of the team is accepted and pushed to its nth degree," said this person, a nurse, "the rest of us will become semi-professionals. The whole ball of wax will change. We will become physician's assistants or ancillaries. I think the concept that health care is more than medical care is necessary. Medical care is a piece of health care. Nursing is a piece. Pharmacy is a piece. Dentistry is a piece. We must talk about how to integrate these different professions, how to teach them they can work together while still retaining their autonomy, how they can be inter-dependent and how they can respect each other as colleagues. If we do not work that out, it is going to be the other way around. The hierarchy will pyramid with physicians sitting on the top, telling the rest of us what to do, and we will never get any bright people in the rest of the professions

because they will not come in."

Obstacle-requirement area number four was data. There was widespread agreement, stated more in terms of a requirement for educating teams than as an obstacle that prevented such education, that rigorous and cogent analysis was necessary on such issues as how health teams were formed, the varieties of health teams, why some worked and why some did not, the manner in which roles, tasks and functions were analyzed and delegated in different settings and for different problems, the types of internal problems that arose in health teams and the possibilities that existed or that were developed for resolving conflicts, and how teams handled the highly controversial "captaincy" issue. One group took a much broader approach to data and said "the only essential need for basic data" was in order to have a better basis for assessing "health," and therefore the effectiveness of the current indicators of mortality, morbidity, and the incidence and prevalence of specific diseases. And three groups spoke in some detail about improving medical records. They suggested the conference consider endorsing the problem-oriented, standardized patient record as something to be used by all health professionals as (1) an instrument of patient care, and (2) an instrument to improve inter-professional communication.

Turning to the delivery system, patient attitudes were seen as an obstacle. "We have all been reared in a generation and a culture in which anything less than the one to one patient-physician relationship is, by implication, if not outrightly

so, considered second-class medical care," the dean of an allied health school observed. "I have been at neighborhood health centers where, after the second physical therapy session, the patient turned around and said, 'When will I get to see the doctor?', making it quite clear that unless he feels he sees the doctor, he is not receiving quality care. What I am saying is that if there is going to be a team, and if there is going to be a more equitable distribution of service to the patient, then the physician himself or herself will have to become more actively involved in pointing out to the patient the various ways by which the patient is going to get more and better care by being turned over to someone other than himself, whose specific skills may be more limited than the doctor's, but infinitely more needed at this particular time for this particular patient. But I have not seen any great willingness on the part of physicians to participate in this exercise, and until they do, we can yell 'teamwork' all we want and the patient is going to say, 'When will I get to see the doctor?' "

Legal and financial obstacles were discussed by all four groups. Two groups speculated on the possibility of institutional licensure as a method of promoting the formation of health teams. "This is relevant to our particular topic," said a medical school dean. "We are looking for some way that the task can be allocated according to capacity without undue risk either to the physician, who in some instances has taken all of the risks, or to the people who are doing the task because they do not have a license and because they may be unduly penalized." Mention

also was made of state laws which stipulate that certain subjects may be taught only to students in specific professions. The groups recognized that such matters as accreditation, liability, credentialling and licensing were being studied by others, and some consensus appeared to emerge that such studies should not "distract" educators from these matters but an appropriate course might be to withhold recommendations in this area until some later date. One group did propose that the conference go on record that schools and organizations wishing to attempt inter-disciplinary techniques not be constrained by existing state laws that are restrictive in nature.

On the financial side, the fee-for-service system was judged by many participants to be an eventual deterrent to the formation of teams. People who took this position made a general argument in behalf of team members being able to decide how each member of the team would be paid. The disparity in incomes among different professions also was mentioned as a possible obstacle. Financial barriers also existed at the educational level. One person questioned the manner in which government supported the expansion of manpower programs. "This is clearly a deterrent to the emergence of concepts of team care in my judgment," he said, "because it favors, by the dollar value assigned to the production of certain workers, a high bonus, and virtually nothing for the education of other essential workers who, if we were to look at the development of a logical system of health care, should be produced in far greater numbers than physicians, dentists, osteopaths, pharmacists, and so forth." As an alternative,

this individual suggested a "unit of health care productive capacity" funding mechanism by which schools would receive money according to their ability to produce a combination of people that had a "logical relationship" to a health system.

Throughout the conference, a number of people questioned the use of the words "health team." Though they had no quarrel with the functional definition of the team offered by Dr. Pellegrino, they felt the word was inappropriate to what was being discussed. They suggested that "systemizing patient care" or "dividing and resynthesizing manpower" might convey more flexibility than did the word "team." One of the four groups that discussed this last question recommended the conference consider using the term "organization of labor" instead. "Team analogies may suggest too high a degree of specialization by the individual players," the group said. In other groups, individuals commented that while the team could be defined functionally, people invariably thought of teams as a fixed unit and that this in turn suggested a curriculum that was pre-set for certain specific types of teams.

Closing Session

At the concluding session, Dr. William Brown, dean of the School of Dentistry of the University of Oklahoma, summarized the discussion groups and Dr. John S. Millis, president of the National Fund for Medical Education, made some general observations. Dr. Millis emphasized six points.

1. The word "team" does not convey a single concept but an extremely wide and varied spectrum of ideas. "We have used very glibly the word 'team,' and I must say, to me it causes a very difficult semantic problem," said Dr. Millis. "Somebody could make a terrifically useful contribution to this very muddled and sticky field if he would come up with a word which would convey the concept universally and so it would not be something subject to a personal and private interpretation. All I am saying is that we are not going to convey our message except as we begin to find the words and the language, and more than just the words, the idea, the concept upon which we are more nearly agreed."

2. The conference focused too much upon the team and not enough upon the game. "Perhaps," Dr. Millis said, "the real question we have before us is: what is the game? What really are its objectives, how do you score, who is the opponent, and really, the prior question is: what is the health game? What is the health business?"

3. One cannot speak with great conviction and certainty about the team enterprise and the delivery of health services

without recognizing that evaluation is "perhaps the necessary, continuing, ever-present ingredient."

4. There was some doubt among the various discussion groups with regard to when team education should enter into the education and training of the student. Dr. Millis felt there was a lesson to be learned here from athletic teams which begin with the physical condition of those who are to form the team, though not the same physical conditioning to each person; which then train the individual team members in their special skills so that each team member has pride in his work and in the contribution he can make; and which then brings them back together as a team in a simulated performance, the scrimmage, before they actually perform as a team. "Perhaps," Dr. Millis observed, "there is something in this wisdom which is conventional wisdom, which says something to us about this problem. There is the necessity for the basic conditioning, the common knowledge and understanding, if you will. But this is never sufficient; there must be specialized knowledge -- conditioning, if you will -- for those whose function is to be specific. There is a necessity for the education and training of the individual in that which is his 'thing,' the thing in which he is going to take his greatest pride, the thing in which he will excell above all others. Then, lastly, the difficult lesson of playing as a team, of sacrificing one's personal interest for the greater good, and this comes, I believe, only in at least a simulation of the real thing; that is, the game."

5. The conference contained "an unhappy amount of the

confession of guilt," whereas many of the problems that had brought the participants together were as much the result of successes as failures. Teams were needed to capitalize upon successes as well as to respond to failures and shortcomings, said Dr. Millis, and he urged the participants to approach their individual tasks and responsibilities "not within the panic of assumed failure" but "in the sense of the joy of success."

6. Too much emphasis was placed on the words "basic sciences," an emphasis that leads to the assumption that some things are basic and others are not. "As an educator," said Dr. Millis, "it has been my lifelong experience that one of the divisive concepts in the university is that something is basic and something else is not basic."

Appendix 4

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BIBLIOGRAPHY

Beckhard, Richard, "Organizational Issues in the Team Delivery of Comprehensive Health Care," Milbank Memorial Fund Quarterly, Vol. L., No. 3, July, 1972, Part I., pp. 287-316.

Beckhard, Richard and Rubin, Irwin M., "Factors Influencing the Effectiveness of Health Teams," Milbank Memorial Fund Quarterly, Vol. L., No. 3, Part I., pp. 317-335.

Brunet, Jacques, "Education and Health Sciences," Journal of Medical Education, Vol. 36, January, 1971, pp. 51-57.

Evans, John R., "Co-ordination of Educational Programs," paper presented at 2nd National Conference on Health Manpower, Ottawa, Canada, 1971, mimeo.

Fry, Ronald E. and Lech, Bernard A., "An Organizational Development Approach to Improving the Effectiveness of Neighborhood Health Care Teams: A Pilot Program," M.S. Thesis, MIT, Alfred P. Sloan School of Management, June, 1971.

Leininger, Madeleine, "This I Believe...About Interdisciplinary Health Education for the Future," Nursing Outlook, Vol. 19, December, 1971, pp. 787-791.

Millis, John S., "A Rational Public Policy for Medical Education and Its Financing," National Fund for Medical Education, New York, 1971, pp. 41-42, 123-127.

Norman, Edward C. and Forti, Theresa, "Problems of Interdisciplinary Learning," paper presented at American Association for the Advancement of Science, December 30, 1972, mimeo.

Parker, Alberta W., "The Team Approach to Primary Health Care," Monograph, Health Center Seminar Program, School of Public Health, University of California, Berkeley, University Extension, 1972.

Pellegrino, Edmund D., "The Changing Matrix of Clinical Decision-Making in the Hospital," in Georgopoulis, "Organization Research on Health Institutions," University of Michigan, Ann Arbor, 1972.

Pellegrino, Edmund D., "Closing the 'Profession Gap' -- Some Notes on Unity of Purpose in the Health Professions," in McTernan and Hawkins, "Educating Personnel for the Allied Health Professions and Services: An Administrator's Handbook," C.V. Mosby Co., St. Louis, 1972.

Sadler, Alfred M., Jr. Sadler, Blair L., and Bliss, Ann A., "The Physician's Assistant -- Today and Tomorrow," Yale University School of Medicine, New Haven, 1972, pp. 135-140, 148-150.

Schoenberg, Bernard and Lefkowitz, Nathaniel, "The Integration of Sociology in a Multidisciplinary Group Teaching Program: Utilization Patterns and Modes of Explanation," in Schoenberg, Pettit, Carr (eds.), "Teaching Psychosocial Aspects of Patient Care," Columbia, 1968, pp. 183-203.

Stearns, Norman S. and Gold, Robert A., "Educational Consultation: A Team Approach to Stimulating Hospital Medical Staff Involvement in Health Care Problems of the Poor," Medical Care, Vol. 10, No. 2, March-April 1972, pp. 179-185.

Szasz, George, "Experiences with Interprofessional Educational Activities at the Health Sciences Centre of the University of British Columbia," September, 1972, mimeo.

Szasz, George, "Interprofessional Education in the Health Sciences: A Project Conducted at the University of British Columbia," Milbank Memorial Fund Quarterly, Vol. 47, No. 4, October, 1969, Part I., pp. 449-475.